DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jonathan Berschadsky on 7/17/2009 and 7/20/2009.

Abstract :

The present invention concerns a method of coding information symbols according to a code defined on a Galois field $\mathbf{F}_q$, where q is an integer greater than 2 and equal to a power of a prime number, and of length $n = p(q-1)$, where $p > 1$. This coding is designed so that there exists a corresponding decoding method, also disclosed by the invention, in which the correction of transmission errors essentially comes down to the correction of errors in p words of length $(q-1)$ coded according to Reed-Solomon. The invention is particularly advantageous when, through a suitable choice of parameters, the code according to the invention is an algebraic geometric code: in this case, it is possible to correct the transmission errors by the method already mentioned and/or by a conventional method which is less economical but has a higher performance.

Claim1: Line 1, before "Method of coding" add ---Computer implemented---.

Allowable Subject Matter

2. After further search and thorough examination of the present application and in view of the prior art of record, claims 1-5 and 11-13, 15-18, 22, 24-28 are found to be in condition for allowance.

Reason for Allowance

3. The following is an examiner's statement of reasons for allowance: The present invention relates to communication systems in which, in order to improve the fidelity of the transmission, the data to be transmitted are subjected to a channel coding.

Independent claims 1, 11, 13, 15, 16, 16, 17, 18, 22, 27 and 28 are allowable because the distinct features claimed in the instant application (No. 10/825,283) are neither anticipated nor render obvious by the prior art of record. Furthermore, the prior arts of record, taken singly or in combination, fail to teach, anticipate, suggest, or render obvious the foregoing limitations.

Claim 1 is allowable because none of the cited references either singular or in combination discloses a computer implemented method including the steps "placing the information symbols successively in p words at of length (q- 1- t/) (where / = 1,p),
c) forming words ut (where / = 1,p) of length (q-1), which constitute components of a precoded word u = [u~//2 ... //p], by supplementing the corresponding word at by means of redundant symbols so that ut is orthogonal to a matrix
H(it), where matrices H(° are defined by H(°ij = yi(j-1) (l _ i - t, 1 _ j _ q-l), where y is a symbol chosen from amongst primitive elements of Fq, and
d) forming a code word
_v = [_v1 _v2 ... _vp]"

Claims 11, 15-17 are allowable because none of the cited references either singular or in combination discloses "a p-tuple of diagonal square matrices (Y1 Yp) of dimension (q-1) on Fq such that, for any i (1 ≤ i q-l), p elements in position (i,i) of these matrices Y~ Yp are different in pairs, having been chosen, it is able to: place the information symbols successively in p words at of length (q-l- t) (where/= 1 ,p), form words ul (where / = 1,p) of length (q-l), which constitute components of a precoded word tt = [_u~ b/2 ... ~..~.p], supplementing the corresponding word at by means of redundant symbols so that ut is orthogonal to a matrix H(^{tl})".

Claims 13 and 18 are allowable because none of the cited references either singular or in combination discloses "an error correction unit able to apply an error correction algorithm to each of the received words r, so as to supply at least one component dt (where / = 1,p) of a post-associated word d, and a redundancy elimination unit able to remove from the at least one component dt symbols situated at positions identical to positions of the component ut with the same / of a corresponding precoded word u, in which redundant symbols were placed at a time of coding."

Claims 22, 27 and 28 are allowable because none of the cited references either singular or in combination discloses "selecting one of a plurality of available decoding algorithms in accordance with the current state of transmission determined in said determining step, including selecting a first decoding algorithm if the mean transmission error rate is determined to exceed the predetermined threshold and selecting a second decoding algorithm if the mean transmission error rate is determined not to exceed the predetermined threshold; and decoding the received symbols by using the selected one of the plurality of available decoding algorithms."

Claims 2-4, 12, 24-26, which are directly or indirectly dependent on one of the independent claims are also allowable over the prior art of record.

These limitations, in conjunction with all other limitations of the base claims were not shown by, would not have been obvious over, would not have been fairly suggested by the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fritz Alphonse, whose telephone number is (571) 272-3813. The examiner can normally be reached on M-F, 8:30-6:00, Alt. Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman, can be reached at (571) 272-3644.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-3824

Information regarding the status of an application may also be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Scott T Baderman/

Supervisory Patent Examiner, Art Unit 2114

/FA/

Examiner, Art Unit 2112

July 17, 2009